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RENOVA - A blended learning delivery model to train medical staff

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Abstract

The article is examining some principles for designing virtual environments dedicated to adults training, revealing a series of requirements for virtual learning using project-based method. The paper is based on the work of the project-team within the RENOVA project (www.projectrenova.eu), financed by the European Commission and developed from February 2011 until February 2013 by a consortium of institutions from Romania, UK, Poland, and France. RENOVA - A knowledge transfer and framework construction for nursing staff across Europe to develop professional skills as managers - is supporting participants in the acquisition and the use of skills and qualifications for professional development in the health management domain, through blended learning sessions.

virtual environments, adult training, project-based method

1. Introduction

The issue of professional development of staff in health domain is, more than ever, a sensitive problem to be addressed through various complementary measures. As a successful proposal considered in a transnational pilot, a project team developed a training delivery model which allow easily updates of the content every year, which is highly interactive, contains relevant electronic study materials, pertains to the real needs of medical staff, and allows online assessment and counseling of professionals.

Consequently, validation of learning acquisition is still subject for debates and further adjustments, both regarding the national legislation integration and the specifics of management of continuous professional development in health sector. The transfer of the project based learning method in the training programs with an online training component proved to be a suitable strategy as far as the design of the curriculum combined the correct tools and innovative methods to allow the traditional use of the facilities offered by the virtual environment and a thorough learning by focusing content and orientation on learning outcomes [1]. RENOVA

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virtual platform for training the medical staff used project-based learning as the axis for further development of specific web-based educational scenarios.

2. Learning through projects in virtual environments - related literature and experiences

Some experiences summarized in evaluation studies and reports reveal a simplistic use of training systems based on web technologies (WBT - Web-based training) and the ignorance of recent theoretical science education guidelines (Helic, 2005) [2]. Authors' suggestion and solution is to design integrated WBT systems that equally support different actual learning paradigms. The argument is that the purpose of these training programs delivered online or in the mixed system (blended learning) is to improve training by replacing or supplementing traditional methods in an attempt to increase the performance of participants measured at the end of the program. In this perspective, the approach of the training project should go through two phases: transposition of existing training and learning practices in a model for use in virtual space (electronic/ digital format), then finding those ways to deliver content and interaction that are specific to the online environment and that bring added value to the training sessions. The premise - which is perfectly valid and consistently mentioned among the advantages of using new technologies in education and training - is that the new ICT should be a catalyst for the innovative, interesting and effective training experience.

2.1. Common Problems

The identification of the problems and learning difficulties associated with the project based method was subject of a meta-analysis conducted in 2000 by J. Thomas (cited Helic 2005) [3], and most of the issues highlighted can be transferred in using the project-based training in the virtual environment. With regards to training participants, they do not have difficulties in generating detailed project blueprint and going through the project steps, but they have problems in managing the time allocated and systematically fail to address the tasks of the process due to the lack of exercise in implementing projects. Also, they find it difficult to efficiently use the data collected during the project. For example, participants tend to draw conclusions based on information from external sources, rather than directly use their results and interpreting them, even though they would serve their goals better. It is the role of trainers to help them anticipate more realistically the complexity and the time required for each stage, through discussions and adjustments in the project development phase, resulting in a better project management. In addition, trainers should indicate on the map what are the most interesting data obtained from the investigations of the project, directing the participants to conclusions based on logic and evidence. Web tools that support the project method in a virtual environment incorporate sufficient variants that the trainer can use to monitor ongoing investigations and provide feedback whenever needed.

On the other hand, several common problems were identified and were also encountered by trainers (Marx et al 1997, cited Helic 2005) [2]. First, the management of the group of trainees is more difficult in the context of project based training approach; in the management of learning, for example, it is difficult to establish from the beginning the proportions between independent work and work with tutorial support in a balance that would be valid for all types of the projects chosen by the participants. Second, inadequate feedback from the trainer can create serious problems to participants; in the cases analyzed, the trainers did not provide enough support during the development of the project, which has led to mismanagement of projects and to unsatisfactory results. In the virtual environment, there is the same need for appropriate tools for quick support in learning and/ or investigations during the project, along with the imperative to adequately design the entire virtual environment in accordance with the purpose and type of training.

2.2. Two multimedia interactive learning environments

Project-based learning was the focus of specific concerns that have followed the development of web tools for education and training. Among the most known are CaMILE and CSILE.

CaMILE (Collaborative and Multimedia Interactive Learning Environment) used the procedural facilitation (concept developed by Scardamalia and Bereiter in 1984) and included facilities for effective collaboration [4]. Procedural facilitation involves the announcement of the role of individual participants in the collaborative group, also suggesting the reaction models in a dialogue. The first version of the platform was developed for Macintosh, afterwards other options for web modules have been built to support *anchored collaboration*, with the help of which comments of the participants could be linked to any context or situation of the platform, through one simple click, leading to increased collaborative activities in the working groups.

CSILE is a tool developed as a result of explicitly formulated recommendations for the requirements of the projects design, particularly those which result in assumptions about the content of training. CSILE consists of a *computer-supported intentional learning environment* designed to support students with difficulties in formulating key questions and developing the project investigations.

But neither of the two instruments provides facilities for project management: the ability to make plans for projects or project phases calendars, effective ways to present projects, etc. [2].

3. Requirements for virtual learning using project based method

The project is a way of organizing a complex learning/ training activity, which requires a longer period of time (one or more weeks). It is a method of pragmatic valences considering its orientation towards a final product. Projects leverages two seemingly antagonistic elements: the individual effort of learning and the cooperative learning.

The project-based learning (PBL) method occurred in early 20th Century, due to the need for flexibility and social relevance of the curriculum and as a means of equalizing opportunities. It requires students to make the plan of activities in the classroom or outside, under the supervision of the trainer, starting with identifying a problem. It can be done individually or in groups. It is a complex method because it integrates, in its turn, other training methods or techniques. Students look for information, process it, formulate problems and seek solutions, evaluate options, decisions, etc. All these activities exploit information and specific capacities of several areas of knowledge. The PBL method is very effective especially for interdisciplinary subjects, precisely because, by nature of the tasks it proposes, it requests the transfer of knowledge and skills acquired in other disciplines, and highlights the cross skills (transversal skills) such as communication, negotiation, planning, organization. It is very important in this method that the student becomes a real partner in making decisions and having the opportunity for free initiative in development of the project.

In developing the theoretical foundation for RENOVA online interactive learning model, a number of requirements for virtual environments approaching project based training (PBT) were formulated as follows:

Support for project management. Trainers should be able to develop curriculum in the form of a project plan. Each plan consists of a sequence of steps that participants must go through to achieve the final goal. Each stage can be described by a number of actions. The plan must include a schedule of activities that establish also the timeline.

Participants are in the center of training. During the project based training sessions, participants must be offered support in achieving learning through various methods and techniques: prompt feedback at all stages of planning and project development, supporting their motivation, offering them examples/ counter-examples, alternatives, additional resources and reflection themes adapted to the project theme and the difficulties of the project, providing tools for communication as well as development and reviewing tools of the products they create together. Also, it is important to avoid "technology abuse" [1] and any restrictive applications and tools as

well as to offer a technological environment able to integrate file formats that are widely used: documents published in the most common word processors, HTML, PDF, spreadsheets, presentations etc.

Support for collaboration. Both the communication between participants and the communication between trainers and participants must take place as a normal act, using tools similar to previous experiences of the trainees. The most common examples of ways of communication in the virtual environment are the forum and chat types, designed for asynchronous, and respectively synchronous communication. Communication tools should allow the opening of private sessions or discussion spaces for collaborative work in groups accessible only to the members of a working group engaged with the same project. As collaborative tools associated with these activities, facilities such wiki/ collaborative online documents must be included as they allow simultaneous editing of the same document. Additionally, you can use web-meeting applications such as Adobe Connect or Dim Dim for virtual training sessions, seminars or colloquia with the entire group.

Support for monitoring participants. In order to monitor and assess progress in learning throughout the course of projects, trainers should have easy access to the desktop of each project and to the documents being edited and uploaded by the participants. There are also some useful tools for monitoring access such as participation checklists, statistics on the number of hits and time spent on the categories of resources as well as track changes facilities for the collaborative documents developed by learners.

Furthermore, in designing the curriculum specific for online training, there were used some specific features of a project-based learning, which situate it among the effective methods, usable in various contexts or training areas, as well as within some current paradigm of constructivist or cognitivist type:

Involvement. Participants are involved in learning, are motivated and consider the results obtained as relevant.

Autonomy. Participants develop competences that help them monitor their learning so that they do not have to rely on a trainer to conduct them.

Applicability. In the projects, participants learn through exploration, apply what they learn and demonstrate their knowledge at the end of the training sequence.

Connections with the real world. During the project, participants can perform a variety of specific tasks specific to the real world, the results of their work being applicable in concrete situations. The work in a project often takes participants outside the training room and can also involve collaboration with professionals/ practitioners of that field.

Support the development of key skills. Project activity favors the development of key skills such as critical thinking, problem solving, decision making and creativity.

PBL characteristics are then to be contextualized in the light of adult learning constraints and/or opportunities. American professor Malcolm Knowles had a major contribution to shaping the field of adult education [5] as research fields and in the popularization of adult learning characteristics, such as:

- independence and motivation in learning: adults need a different guidance, a non-directive one, they need support; their motivation is intrinsic and related mainly to the profession;
- the need to link learning with the experience and the prior knowledge of learners; learning is not predominantly a process of accumulation, but a restructuring one, a development and generalization, and students feel the need to relate theories and concepts with their own experience that they want to exploit;
- learning oriented to a goal: adults want to know very clearly and right from the beginning why and for what they are taking a course;
- relevance of learning: adults seek to understand the applicability of knowledge and the value of what they learn in terms of their social or professional life; in the case of project-based training, students can choose topics according to their interests and needs;
- pragmatism: adults find and select the most relevant and useful aspects/ knowledge/ skills;
- the need to be respected and for their experience to be recognized (and from this perspective the project method is very adequate as it allows students to highlight and exploit their own knowledge and experience).

Based on these main characteristics of the learning process for adults, some techniques can be extracted in order to facilitate the online learning by using the PBT method:

1. identification, valuation and use of the previous personal experience (project not only allows, but should even be based on previous experience);

2. treat students with respect and create an environment based on trust and cooperation – aspects favored by the work in small groups and the role of facilitator or organizer that the trainer mainly has when using this method;

3. orientation of the training towards practical solutions and clear goals, relevant to the profession of the participants (students are involved in management of the training process);

4. encouraging reflection on their experiences and extracting "lessons";

5. involve students in activities by ensuring the relevance of the content, by designing their own tasks, by fostering the exchange of experience, collaboration and small groups work;

6. students motivation (motivation changes their behavior, increases their attention, it stimulates and guides their learning).

4. Conclusions

Project based learning method is increasingly used both in formal and non-formal learning contexts, including specific types of training programs such as blended learning or exclusively online. Collaborative and extended work tasks, targeting the solving of real problems are considered a learning experience that trainers are calling upon to give significance and sustainability to the learning process, to give students the opportunity to explore complex issues, to realize practical and reinforce theoretical concepts as well as the specific language of that knowledge domain.

The model developed in RENOVA project is proving to be an appropriate approach to tackle the issue of continuous professional development of medical staff. The transfer of the project based learning method in the training programs with an online training component proved to be a suitable strategy as far as the design of the curriculum combined the correct tools and innovative methods to allow the traditional use of the facilities offered by the virtual environment and a thorough learning by focusing content and orientation on learning outcomes. Research shows that well-known and tested training techniques must be further kept and used and the applications with higher degree of novelty must intervene only if justified in terms of teaching. Focusing on technology is both a temptation and a tendency both at the level of the training conceivers and among participants, but balancing the excess/ abuse of technology starting from the design phase of the training platform allows a balanced use and a focus on learning.

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